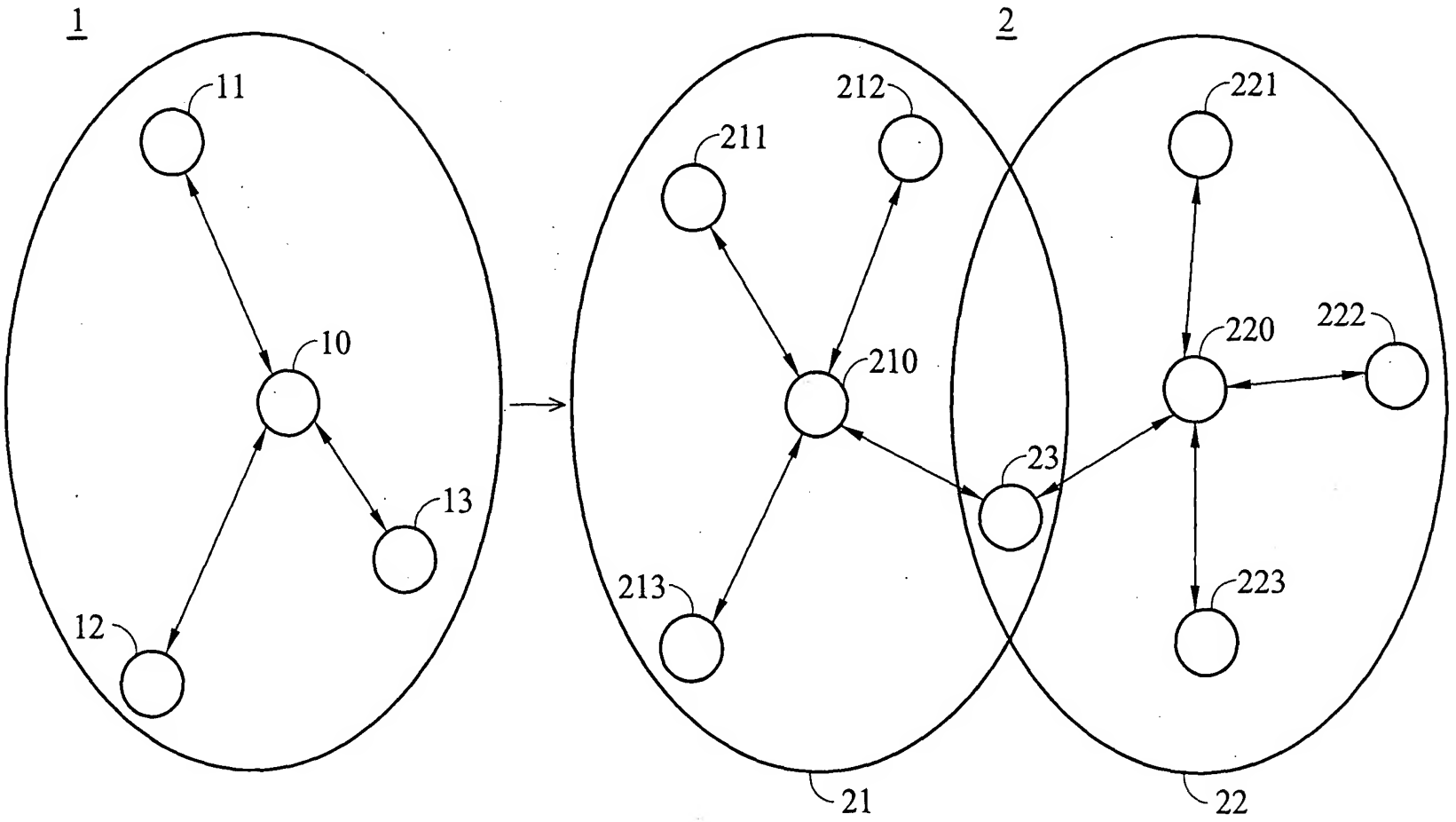

FIG. 1 (PRIOR ART)

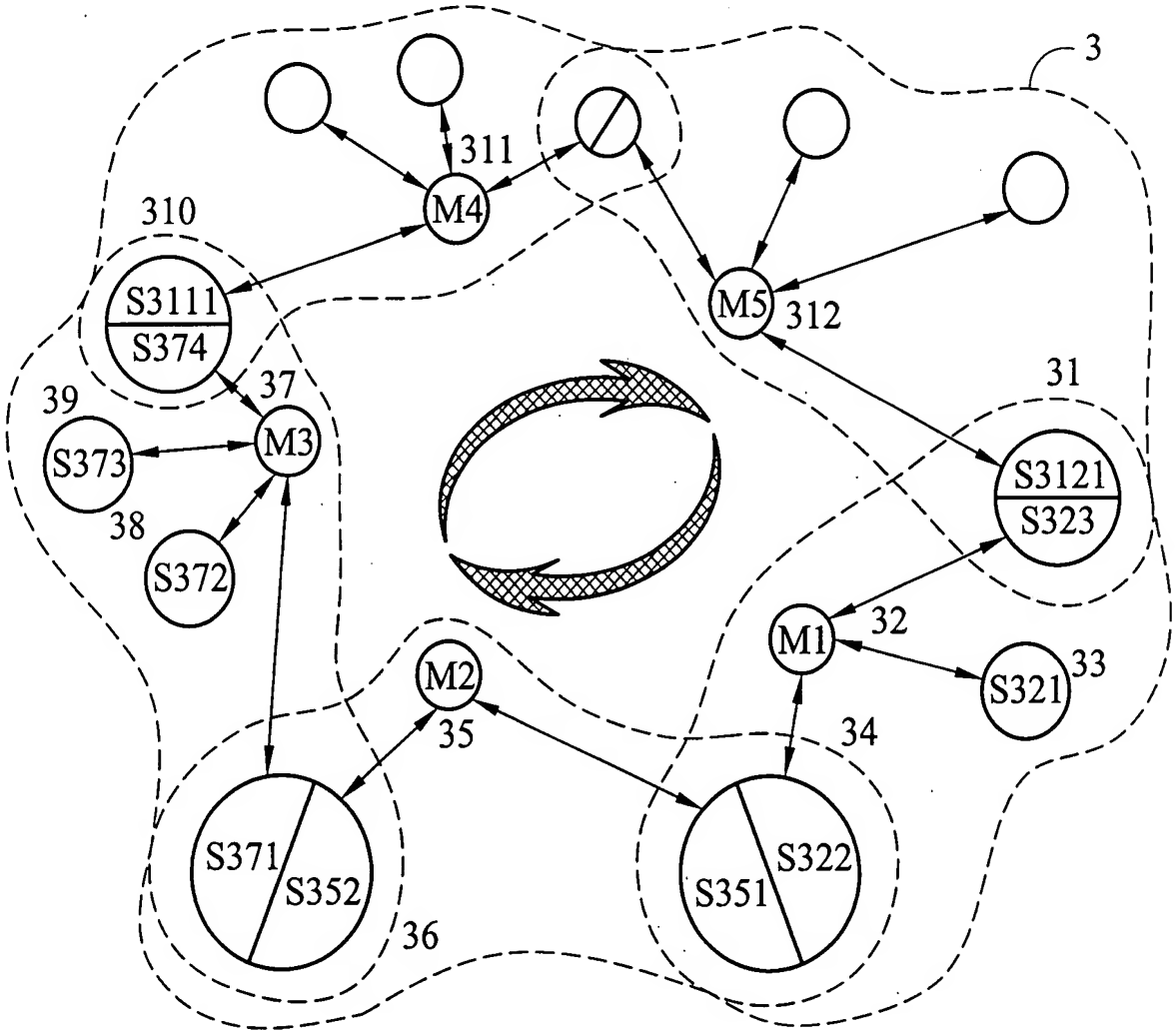
3
311
M4
310
S3111
S374
37
39
S373
M3
38
S372
M5
312
31
S3121
S323
32
M1
S321
33
M2
35
34
S371
S352
36
S351
S322

FIG. 2

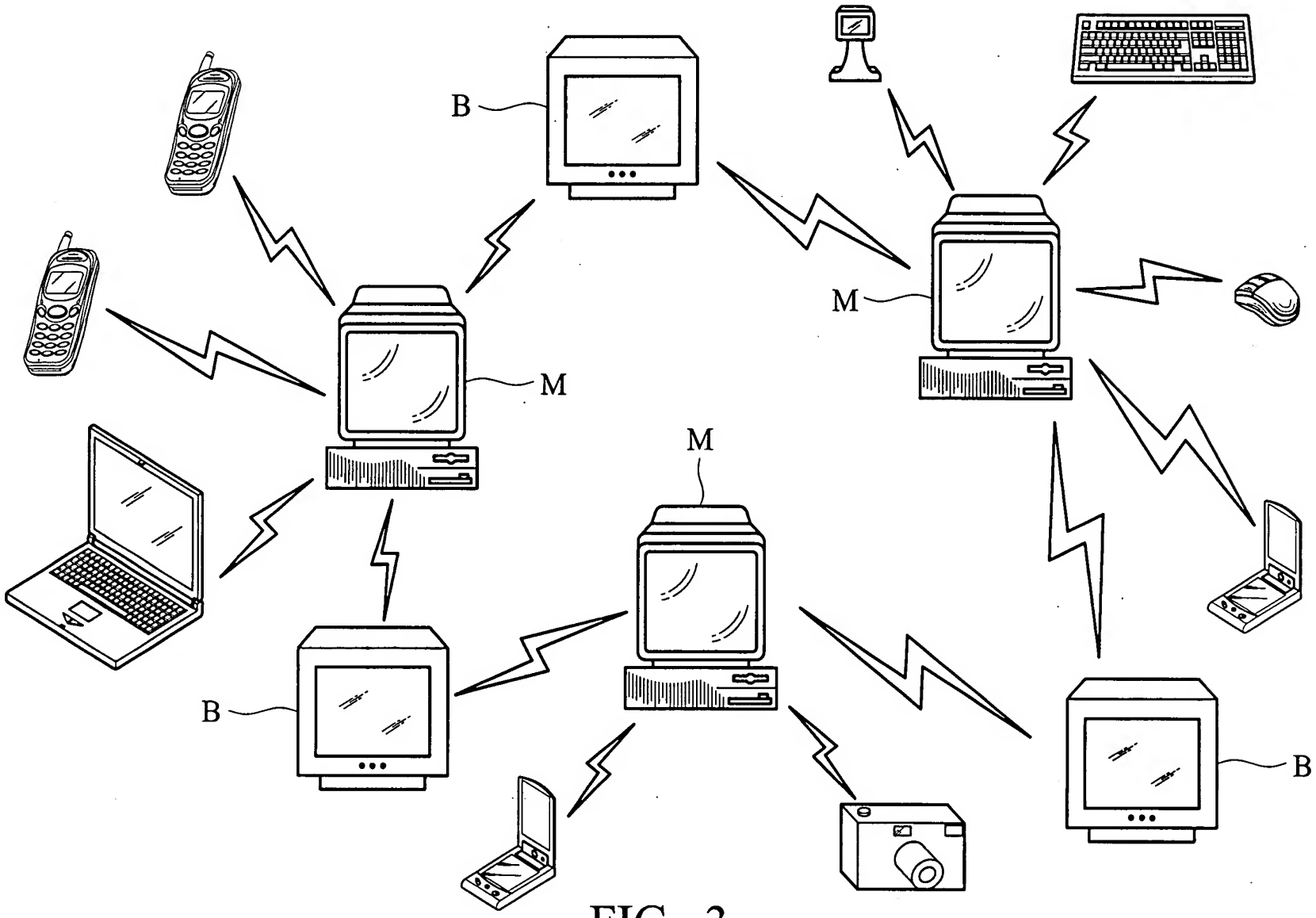

FIG. 3

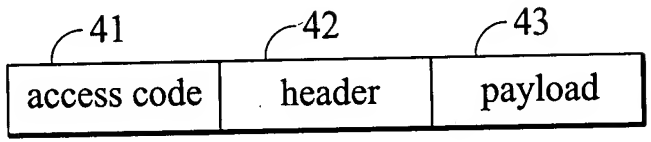
41
42
43
access code
header
payload

FIG. 4

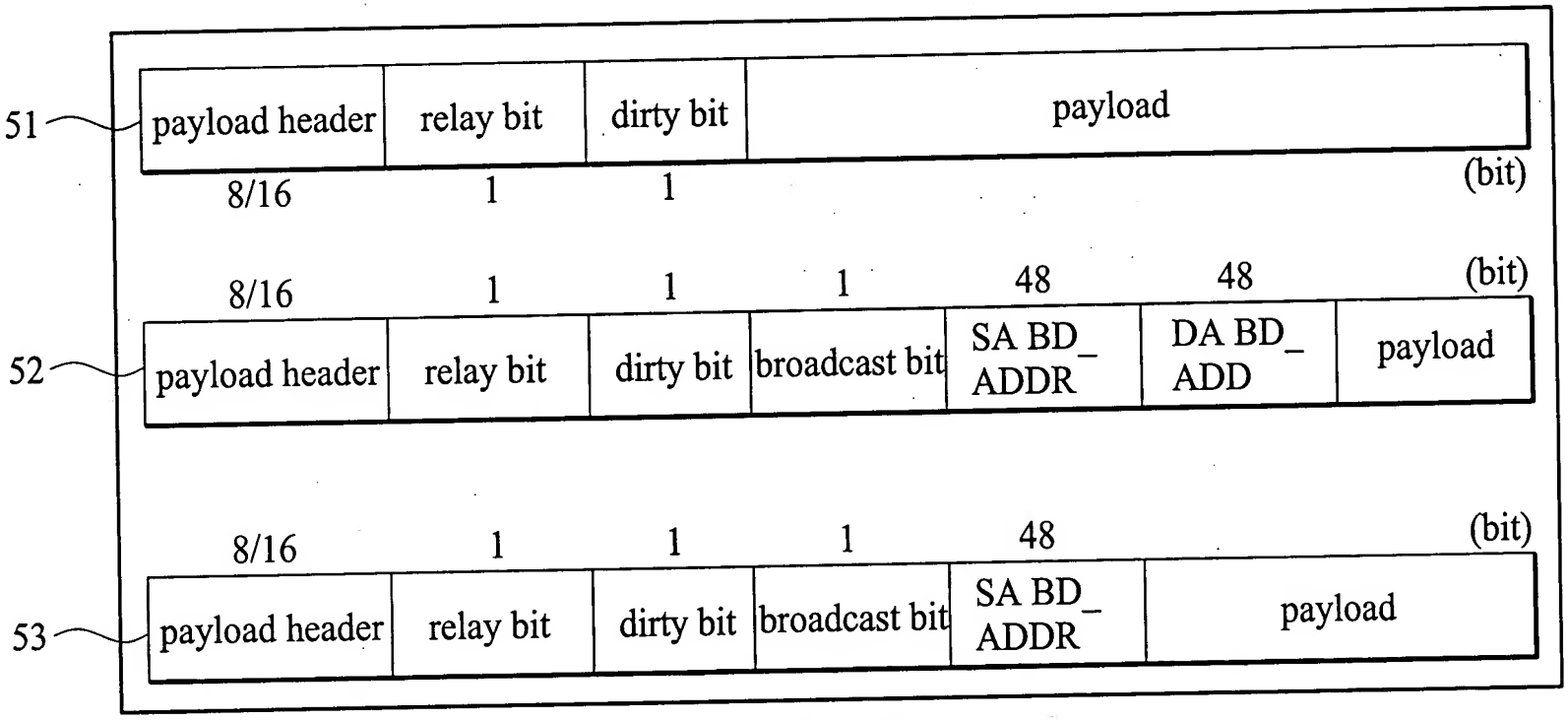
51
payload header
relay bit
dirty bit
payload
8/16
1
1
(bit)
8/16
1
1
1
48
48
(bit)
52
payload header
relay bit
dirty bit
broadcast bit
SA BD_ ADDR
DA BD_ ADD
payload
8/16
1
1
1
48
(bit)
53
payload header
relay bit
dirty bit
broadcast bit
SA BD_ ADDR
payload

FIG. 5

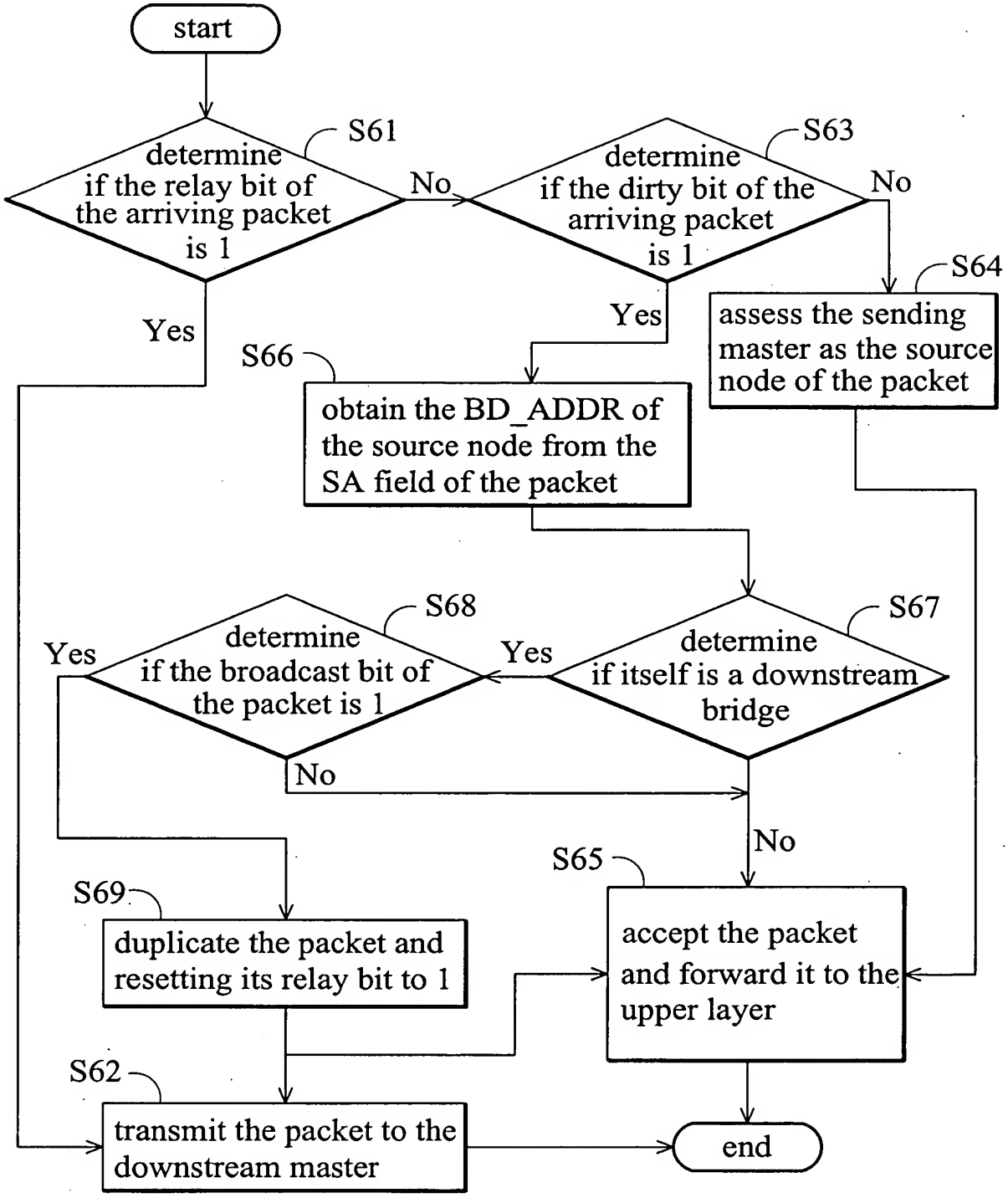
start
S61
determine if the relay bit of the arriving packet is 1
No
S63
determine if the dirty bit of the arriving packet is 1
No
S64
assess the sending master as the source node of the packet
Yes
Yes
S66
obtain the BD_ADDR of the source node from the SA field of the packet
S68
determine if the broadcast bit of the packet is 1
Yes
Yes
S67
determine if itself is a downstream bridge
No
No
S65
accept the packet and forward it to the upper layer
S69
duplicate the packet and resetting its relay bit to 1
S62
transmit the packet to the downstream master
end

FIG. 6

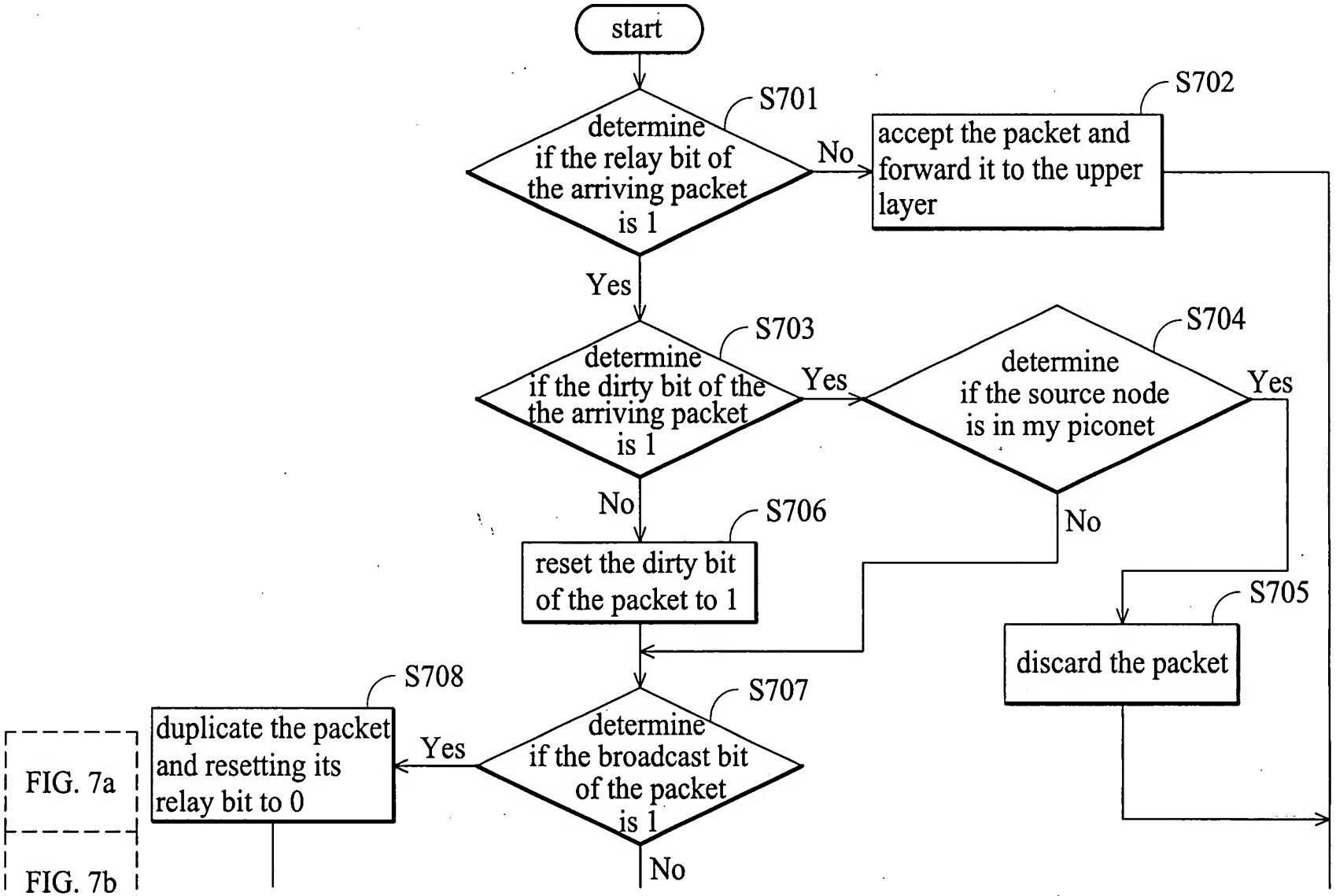
start
S701
determine if the relay bit of the arriving packet is 1
No
S702
accept the packet and forward it to the upper layer
Yes
S703
determine if the dirty bit of the the arriving packet is 1
Yes
S704
determine if the source node is in my piconet
Yes
No
S706
reset the dirty bit of the packet to 1
No
S705
discard the packet
S708
duplicate the packet and resetting its relay bit to 0
Yes
S707
determine if the broadcast bit of the packet is 1
No
FIG. 7a
FIG. 7b

FIG. 7a

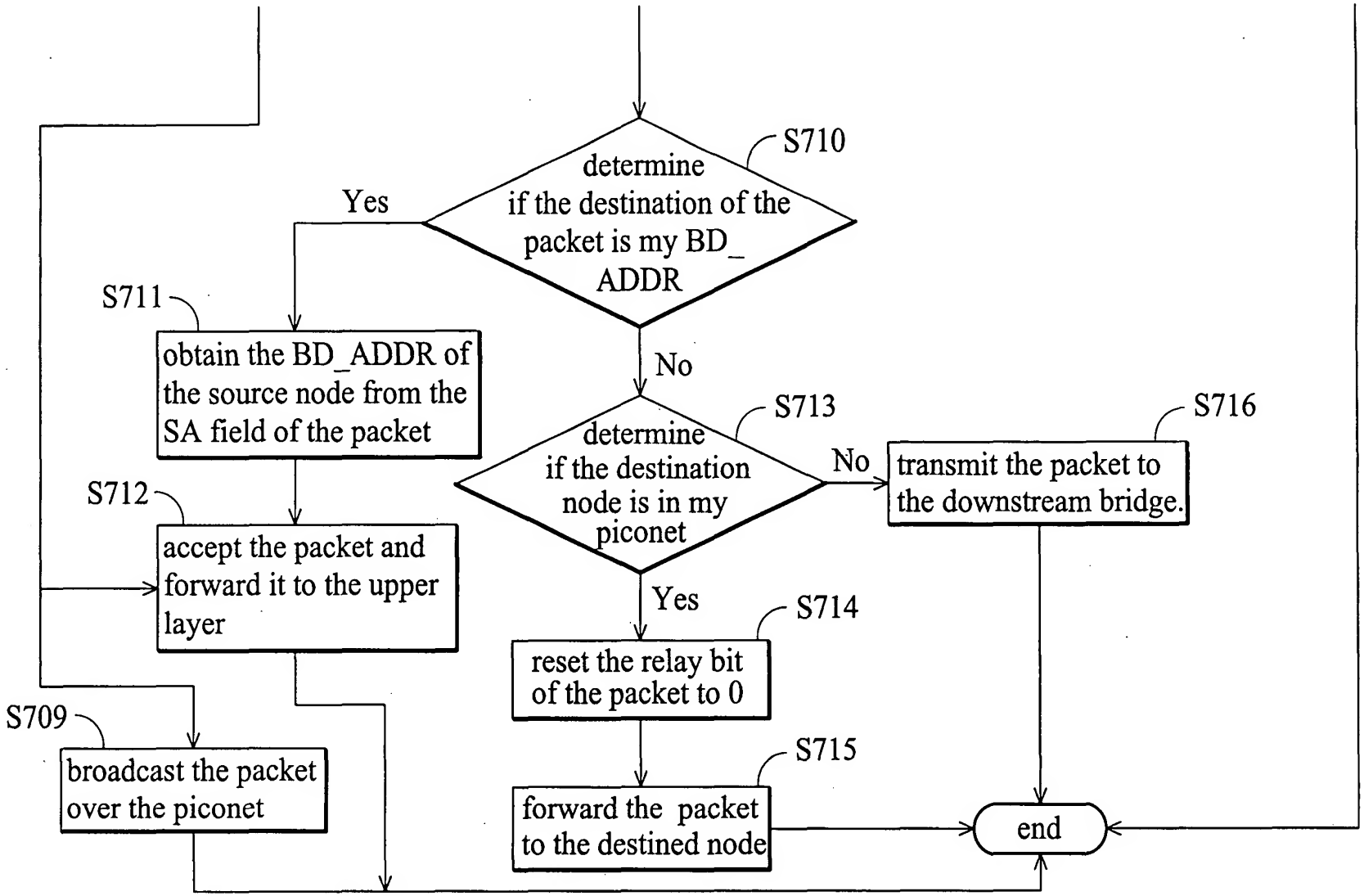
S710
determine if the destination of the packet is my BD_ ADDR
Yes
No
S711
obtain the BD_ADDR of the source node from the SA field of the packet
S712
accept the packet and forward it to the upper layer
S713
determine if the destination node is in my piconet
No
S716
transmit the packet to the downstream bridge.
Yes
S714
reset the relay bit of the packet to 0
S715
forward the packet to the destined node
S709
broadcast the packet over the piconet
end

FIG. 7b

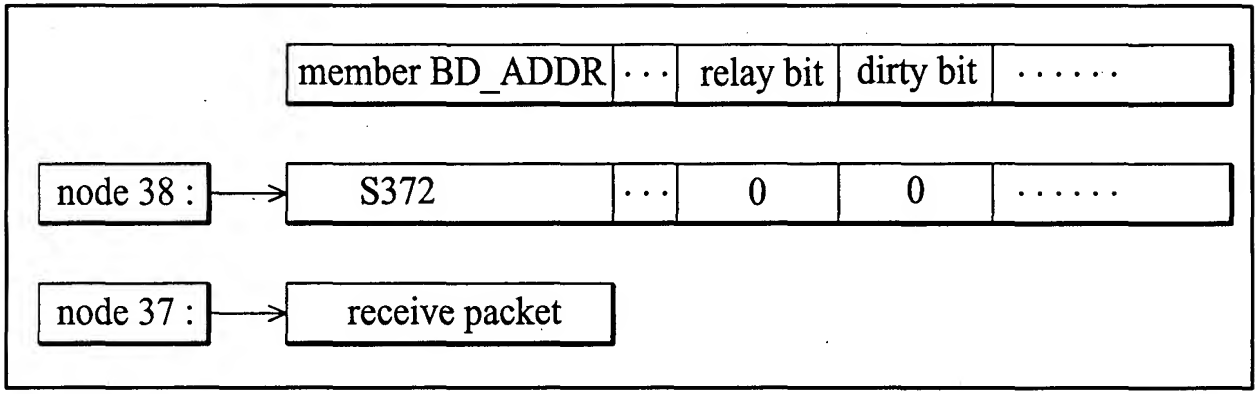
member BD_ADDR
· · ·
relay bit
dirty bit
· · · · · ·
node 38 :
S372
· · ·
0
0
· · · · · ·
node 37 :
receive packet

FIG. 8a

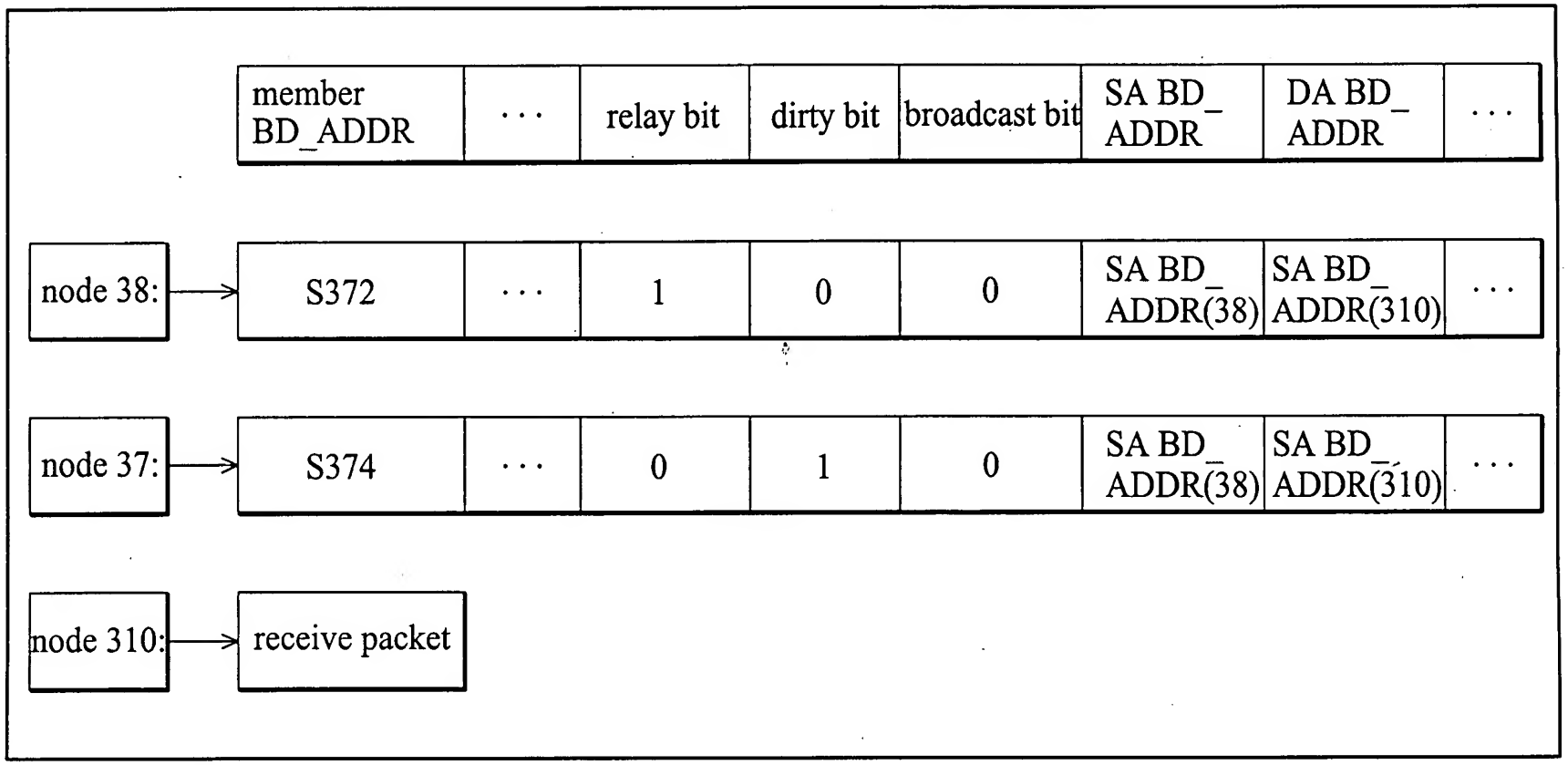
member BD_ADDR
· · ·
relay bit
dirty bit
broadcast bit
SA BD_ ADDR
DA BD_ ADDR
· · ·
node 38:
S372
· · ·
1
0
0
SA BD_ ADDR(38)
SA BD_ ADDR(310)
· · ·
node 37:
S374
· · ·
0
1
0
SA BD_ ADDR(38)
SA BD_ ADDR(310)
· · ·
node 310:
receive packet

FIG. 8b

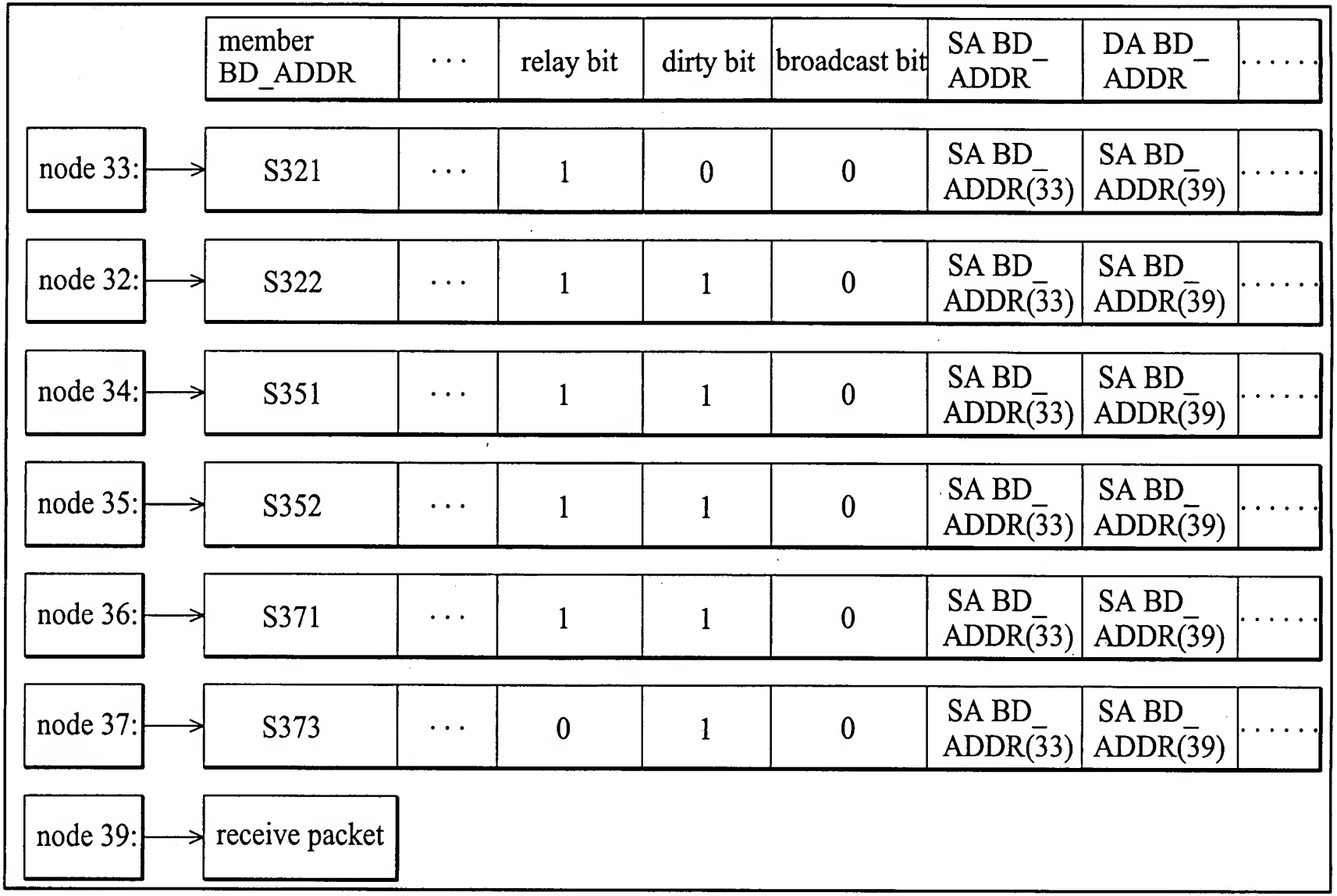
member BD_ADDR
· · ·
relay bit
dirty bit
broadcast bit
SA BD_ ADDR
DA BD_ ADDR
· · · · · ·
node 33:
S321
· · ·
1
0
0
SA BD_ ADDR(33)
SA BD_ ADDR(39)
· · · · · ·
node 32:
S322
· · ·
1
1
0
SA BD_ ADDR(33)
SA BD_ ADDR(39)
· · · · · ·
node 34:
S351
· · ·
1
1
0
SA BD_ ADDR(33)
SA BD_ ADDR(39)
· · · · · ·
node 35:
S352
· · ·
1
1
0
SA BD_ ADDR(33)
SA BD_ ADDR(39)
· · · · · ·
node 36:
S371
· · ·
1
1
0
SA BD_ ADDR(33)
SA BD_ ADDR(39)
· · · · · ·
node 37:
S373
· · ·
0
1
0
SA BD_ ADDR(33)
SA BD_ ADDR(39)
· · · · · ·
node 39:
receive packet

FIG. 8c

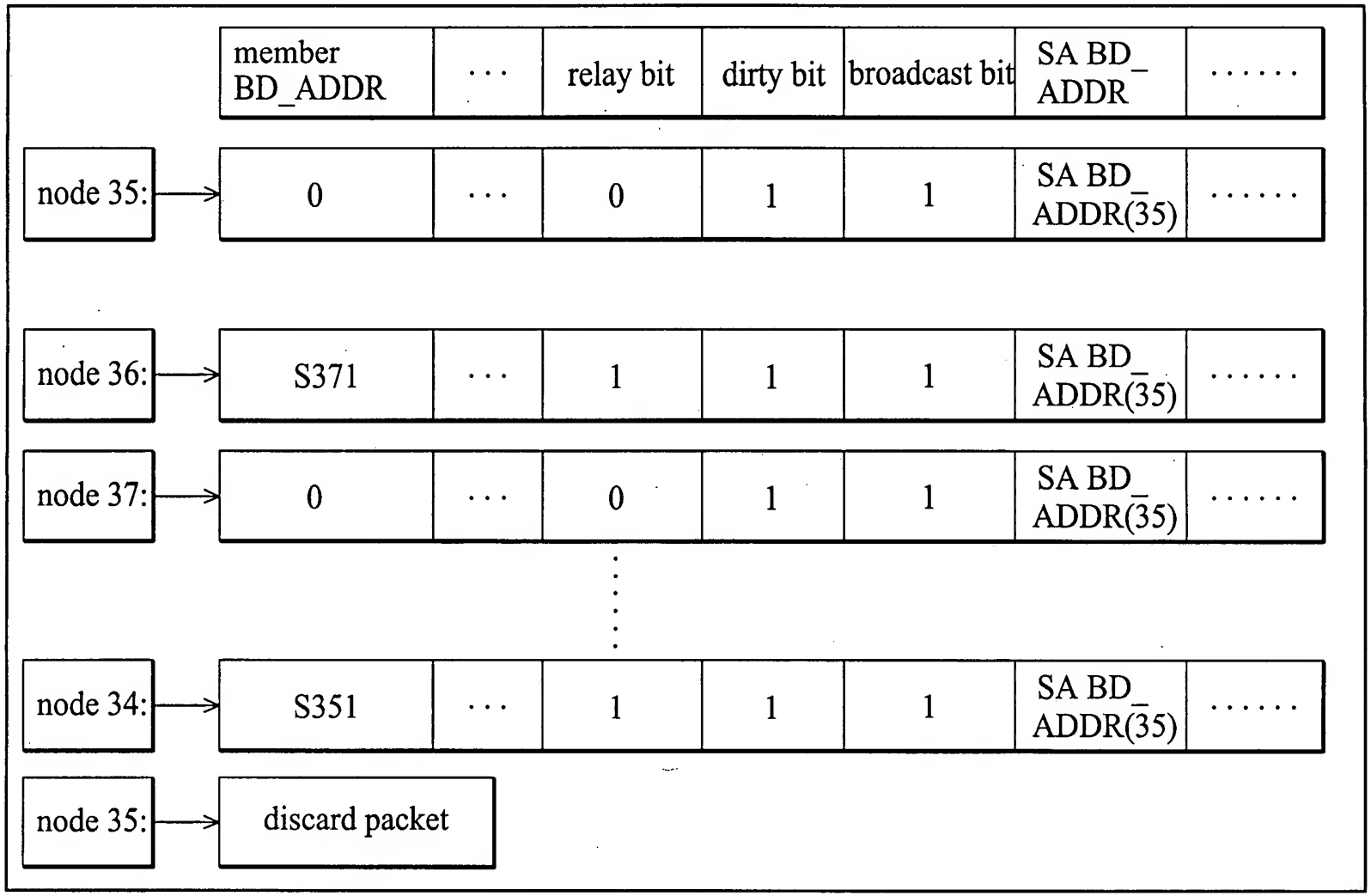
member BD_ADDR
· · ·
relay bit
dirty bit
broadcast bit
SA BD_ ADDR
· · · · · ·
node 35:
0
· · ·
0
1
1
SA BD_ ADDR(35)
· · · · · ·
node 36:
S371
· · ·
1
1
1
SA BD_ ADDR(35)
· · · · · ·
node 37:
0
· · ·
0
1
1
SA BD_ ADDR(35)
· · · · · ·
node 34:
S351
· · ·
1
1
1
SA BD_ ADDR(35)
· · · · · ·
node 35:
discard packet

FIG. 8d

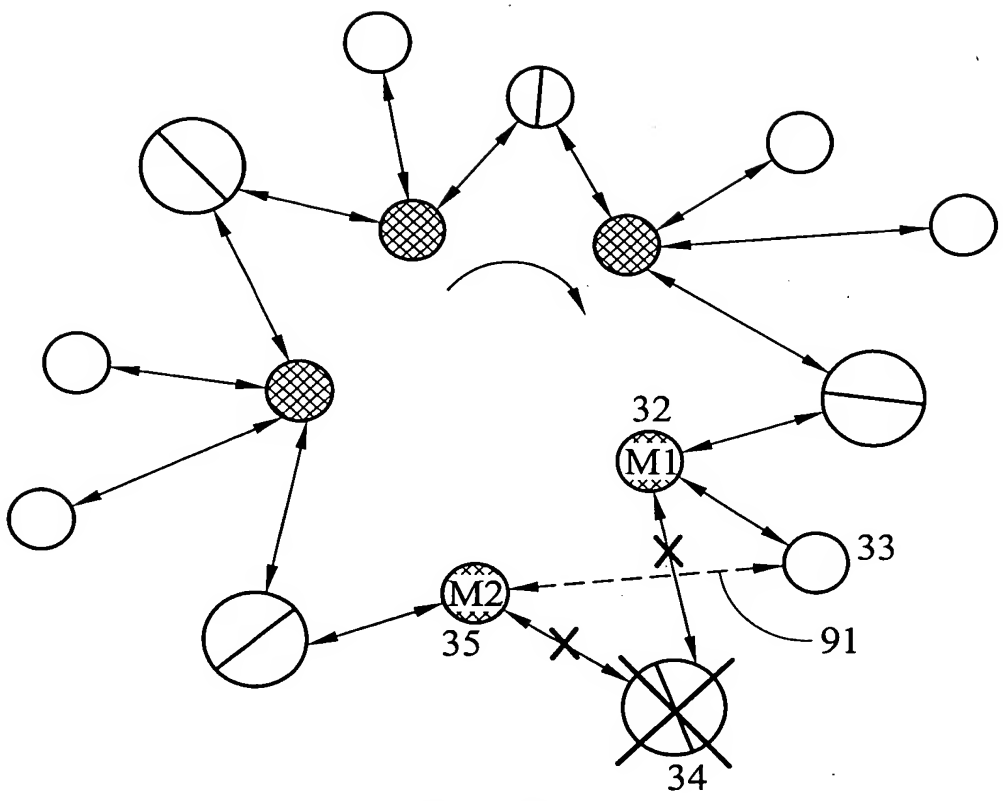

FIG. 9a

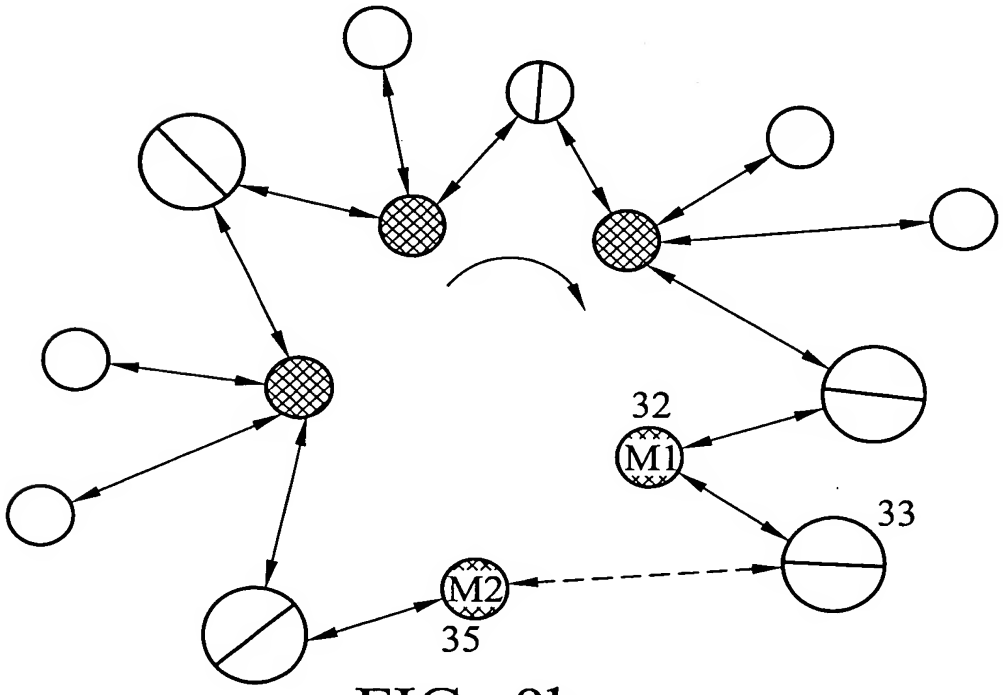

FIG. 9b

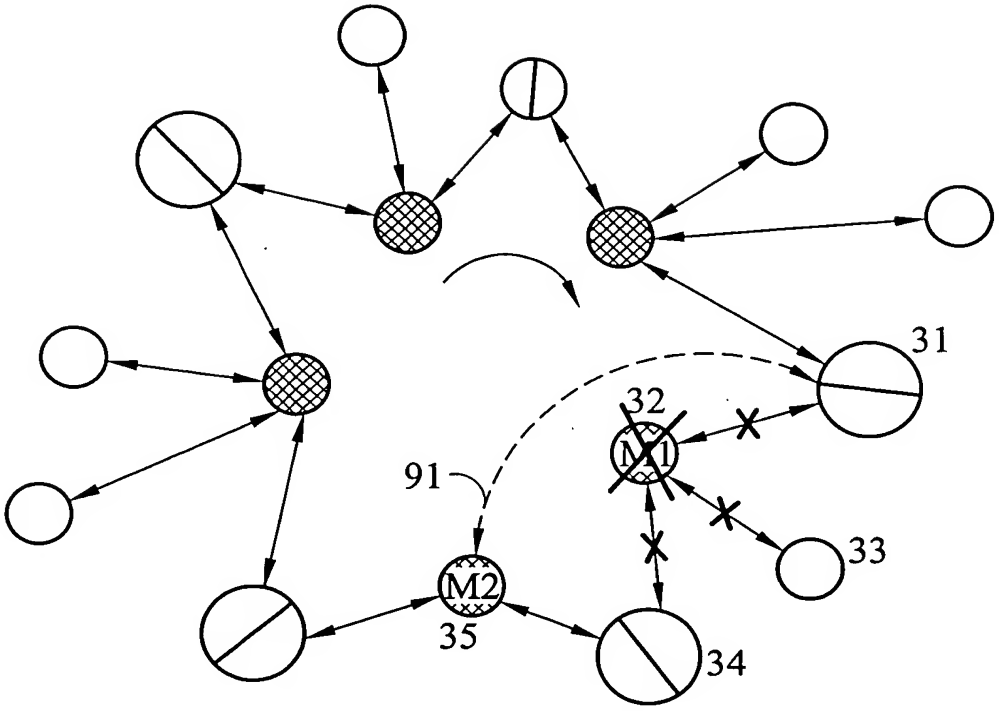

FIG. 10a

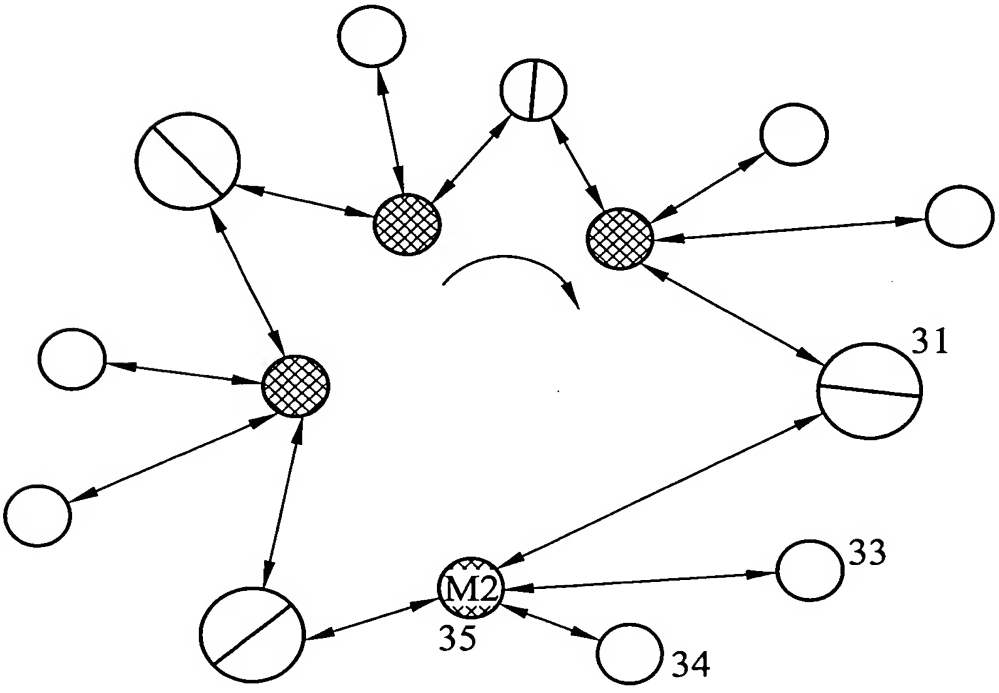

FIG. 10b

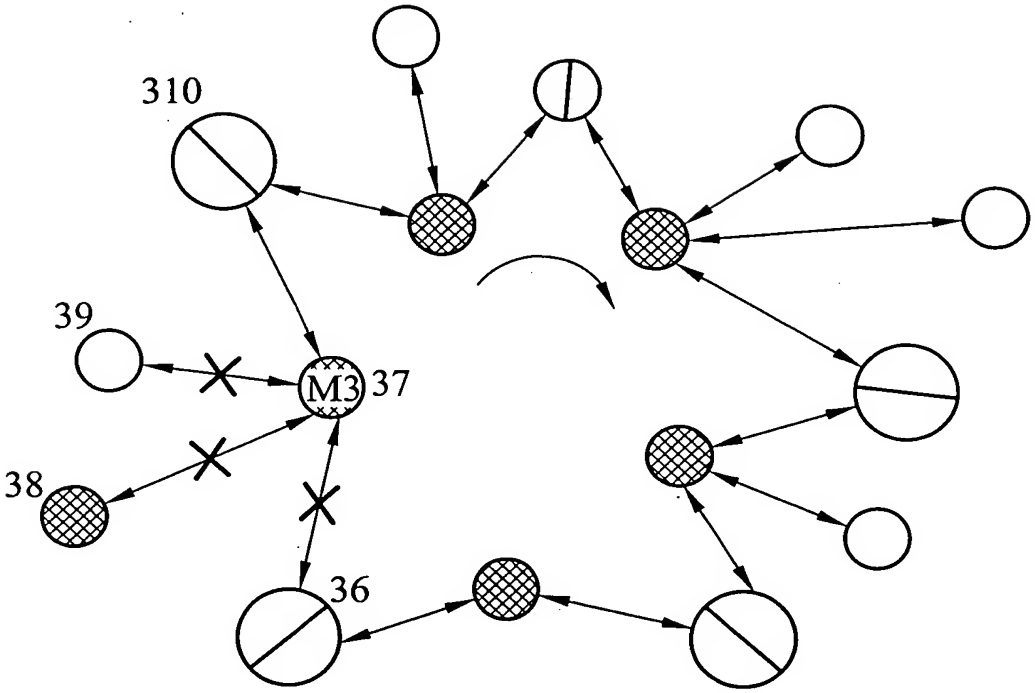

FIG. 11a

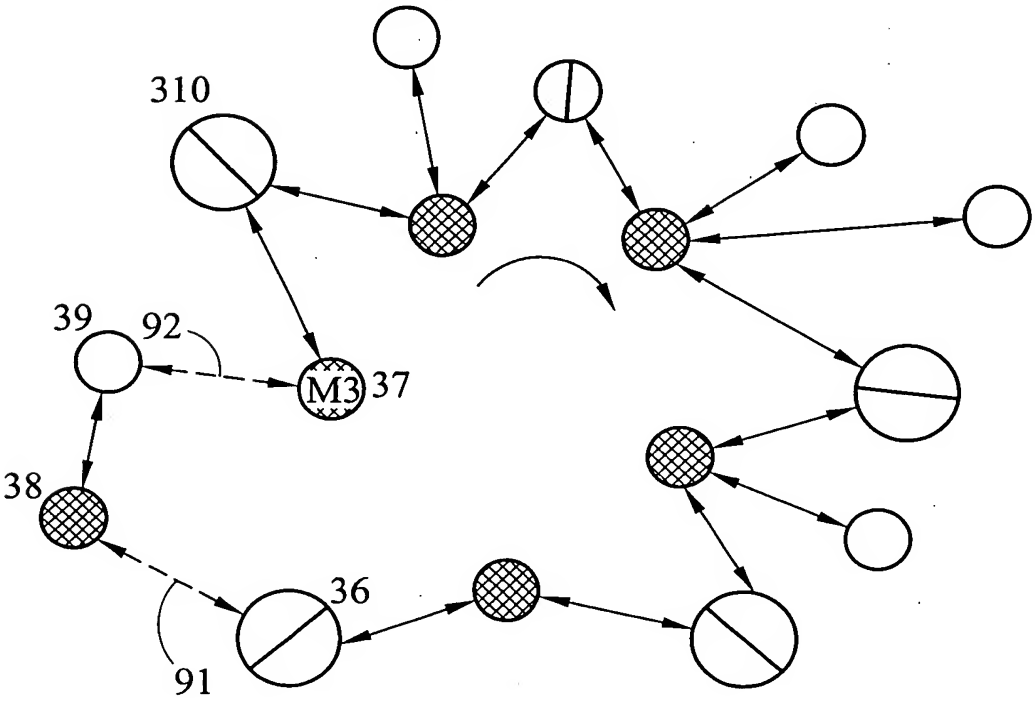

FIG. 11b

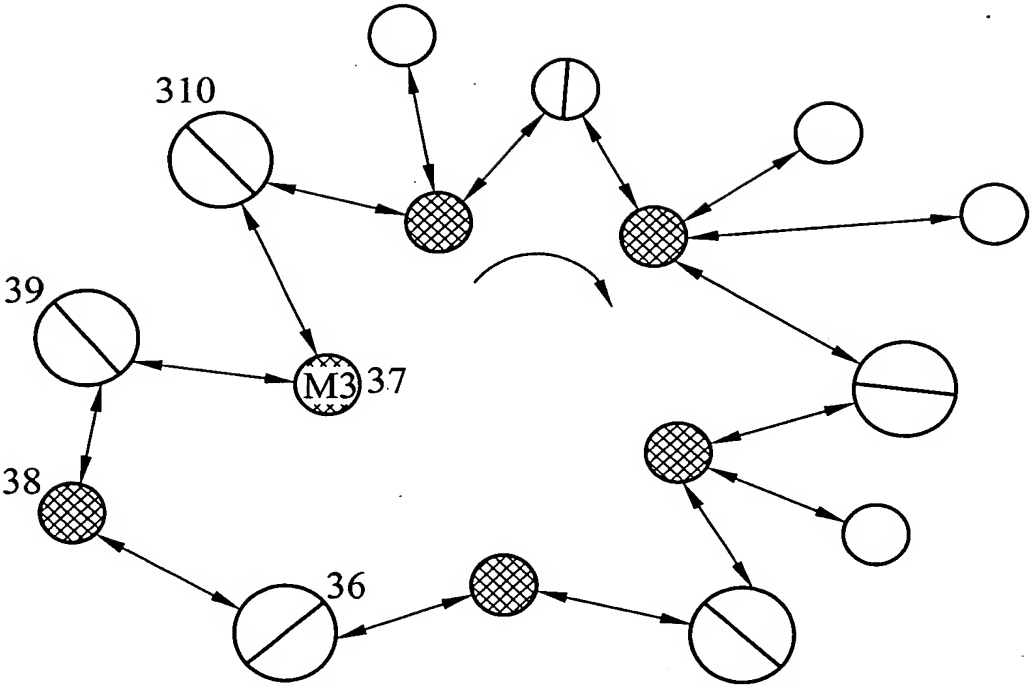

FIG. 11c